SUPPORT FOR THE AMENDMENT

Claims 1-7 are currently amended.

Claims 8-20 are added.

The claims have been amended for minor editorial purposes and in accordance with the Examiner's suggestions.

The amendments to claims 1-8 are supported by the specification at page 1, line 38 through page 2, line 33.

Claims 8-20 are supported by the specification at page 4, line 27 through page 5, line 29.

No new matter has been added.

Upon entry of the amendments, claims 1-20 will be pending in the present application.

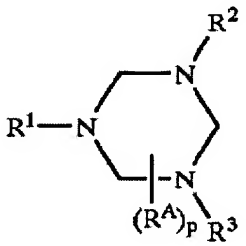
REQUEST FOR RECONSIDERATION

The claimed invention relates to a process for the **oligomerization of α-olefins having at least three carbon atoms,** in which the olefin is brought into contact with a specific catalyst system. In particular, the specific **catalyst system** is obtainable from:

a) at least one **chromium source**;

b) at least one **ligand of the formula I**

(I)



where R^1 to R^3 are each, independently of one another, C_4-C_{30}-alkyl which has *no* α, β or γ branching,

R^A is an organic group having from 1 to 30 carbon atoms which is bound via a silicon atom or a carbon atom, and

p is from 0 to 6; and

c) at least one **activator comprising a boron compound**, with the molar ratio of B:Cr being at least 5.

(See present claim 1). (Emphasis added).

According to the present specification, the claimed process "leads to high yields of olefin oligomers and preferably gives defined oligomers, in particular trimers, with high selectivity." (Present specification at page 1, lines 30-33). Such a process is not described or suggested by the cited reference of record.

Accordingly, the rejection of claims 1-7 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over WO 00/58319 (WO '319) is respectfully traversed.

In particular, when the disclosure of WO '319 is viewed as a whole, there is no sufficient specificity or evidentiary support for a process that includes the *combined* features of the claimed invention.

For instance, regarding the disclosure of ligands, Applicants note that WO '319 describes suitable ligands at page 4, lines 35 to 44 of the reference. Among the vast number of listed compounds, only 1,3,5-tri-n-octyl-1,3,5-triazacyclohexane and 1,3,5-tri-n-dodecyl-1,3,5-triazacyclohexane appear to overlap with any ligand according to claimed invention. However, the majority of the ligands described on page 4, lines 35 to 44 of the reference have an α-branching or β-branching or an alkyl residue having less than four carbon atoms. Moreover, at page 10, lines 21 to 32 the reference indicates that substituents R^1 to R^3 with a β-branching are especially preferred, which clearly teaches away from the claimed invention. Further, Applicants note that there does not appear to be any motivation or any advantage described in the reference, such that one would selectively choose a ligand where substituents R^1 to R^3 would *not* include an α-branching or β-branching.

Regarding the disclosure of an activator, Applicants note that the reference only describes an activator comprising a boron compound as an optional feature. As described on page 12, line 19 of the reference, the ratio of chromium compound to boron compound may include the broad range of 1:0.1 to 1:10,000, preferably 1:1 to 1:1,000. Table 2 on page 22 of the reference only recites an example (i.e., Example 21), in which the ratio of B:Cr is 10:1, which appears to overlap with the range of the claimed invention. However, in Example 21, it is noted that chromium complex 9 that was used is based on 1,3,5-tris-(2-ethylhexyl)-1,3,5-triazacyclohexane, a ligand of the formula I, in which R^1 to R^3 are 2-ethylhexyl having β-branching. As such, the combination of the claimed specific ligand and activator is clearly not exemplified, and thereby not suggested by the reference.

In contrast, as discussed above, the process according to the claimed invention is clearly based on a specific *combination* of features for the catalyst which is not suggested by the disclosure of WO '319. Moreover, as evidenced by the table on page 6 of the present specification, the activity of the catalysts according to the present invention (Examples 1 and 2) is higher than Comparative Example 3 (having a lower molar ratio of B:Cr) and Comparative Example 4 (wherein a ligand with substituents R^1 to R^3 having an β-branching is employed). The table on page 6 of the present specification is reproduced below for the Examiner's convenience, as a non-limiting demonstration of the claimed invention.

TABLE

Ex.	Cat [μmol]	DMAB*	TIBAL**	DEAC**	Activity $kgC_{12}/mol_{Cr}/h$
1	39.4	10	50	5	283
2	38.5	10	50	—	175
3***	40.6	2	50	—	130
4***	38.1	10	50	—	67

*Molar ratio of B:Cr
**Molar ratio of Al:Cr
***Comparative examples

The above-demonstrated results are clearly not indicated by WO '319, which describes and exemplifies the preferred use of a ligand with substituents R^1 to R^3 having an β-branching. Therefore, the claimed invention is novel and unobvious over the reference.

Accordingly, withdrawal of the rejection is requested.

Applicants submit that added claims 8-20 are also novel and unobvious over WO '319, since these claims depend directly or indirectly from amended claim 1, in which the added features are not described or suggested by the reference.

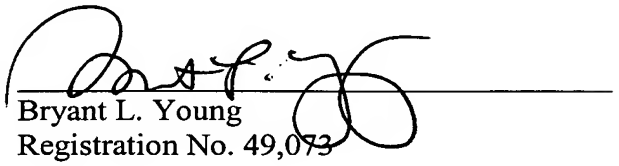
The objections to claims 1 and 5 are obviated by amendment, as shown above.

Applicants submit that the application is now in condition for allowance. Early notification of such allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Bryant L. Young
Registration No. 49,073

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)